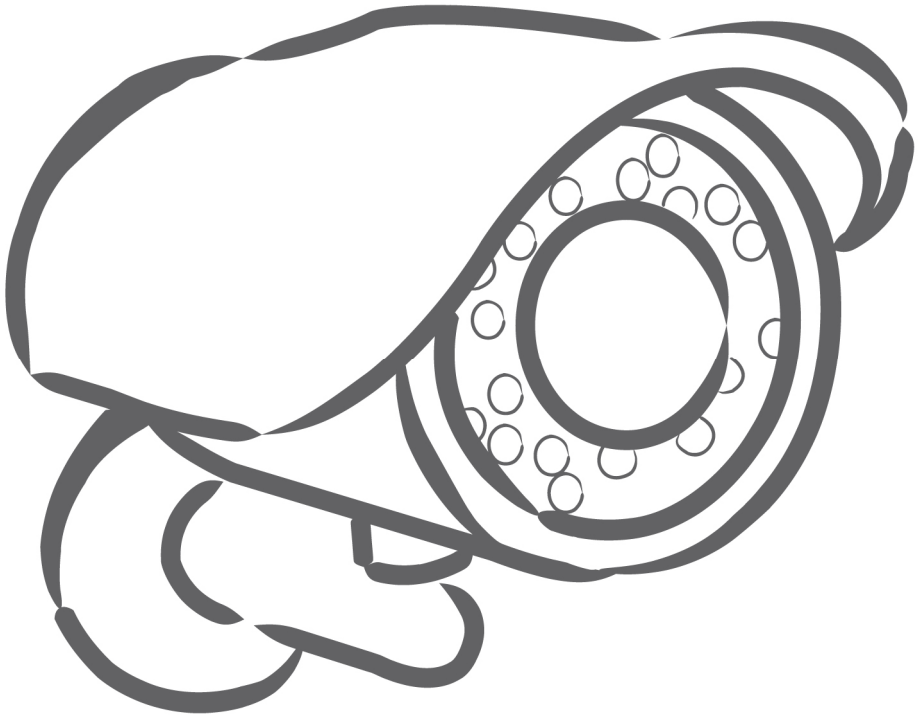
NETWORK CAMERA

User Manual



F34-870070-000A 870 A.2

Notice of Use

This manual is designed for administrators and users of the network camera. Please read it carefully before use. All requirements should be followed before using this camera.

- We are not responsible for any technical or typographical errors and reserves the rights to change the product and manuals without notice.
- Keep this document for future reference.
- Please make sure the power source is 12V DC / 24V AC / PoE. Only connect to the camera to this required power system.

  Caution: For heater model, the power source must be 24V DC / 24V AC.
- The camera must be installed on a solid mounting surface.
- Keep the camera and other accessories dry.
- We are not responsible for any damage caused by inappropriate use.

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1. Product Overview

1.1 Key Features

High Definition Images

Clear and detailed HD quality images in all conditions. Unlike traditional megapixel cameras, HD offers higher resolutions and better frame rates at an international industry standard. Blurry images are reduced and individuals and objects of interest come through in perfect clarity.

Triple Streaming

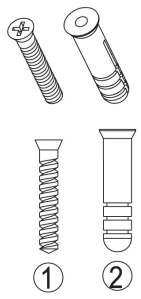
The Network Bullet Camera is a high performance HD camera designed to show extreme image detail. H.264/MPEG4/MJPEG triple streaming allows you to choose the appropriate codec for your bandwidth. Using a video player (VLC player…etc), you can view your RTSP stream from anywhere.

Cost-saving H.264 Support

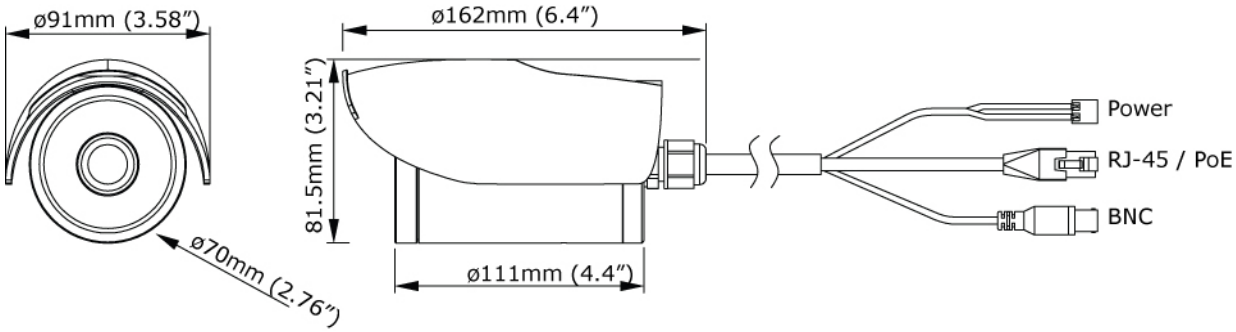
The Network Bullet Camera supports the H.264 compression standard. H.264 greatly reduces the size of video compared to MJPEG and MPEG4 without compromising image quality. Storage and bandwidth needs are reduced. Plus, H.264 is expected to become the video standard of choice, so your camera is future proofed.

1.2 Package Contents

Network Bullet Camera	x1
Quick Start Guide	x1
CD-ROM (User Manual & IP Finder)	x1
Guide Pattern Sticker	x1
RJ45 Female / Female Coupler	x1
Pack-in Bracket	x1
(1) Flat Head Screw (Tapping Type)	x3
(2) Plastic Anchor	x3



1.3 Dimension and Connectors



- **Power In (Red+/Black-):** Connects to DC 12V / AC 24V power supply. If you are to use power from Ethernet connection, this connector is not used when the power is provided by PoE.

Note: Camera with heater requires DC24V/ AC24V power supply. The heater model doesn't support PoE function.

- **RJ-45 Ethernet Connector:** Connects to the LAN port of a standard 10Base/100Base-TX device, e.g., hub, switch or router.
- **BNC:** Connects to composite video in connector of a monitor. Note that when connecting the camera to an analog monitor, the **Power In** connector must be connected to external power source.

1.4 Specifications

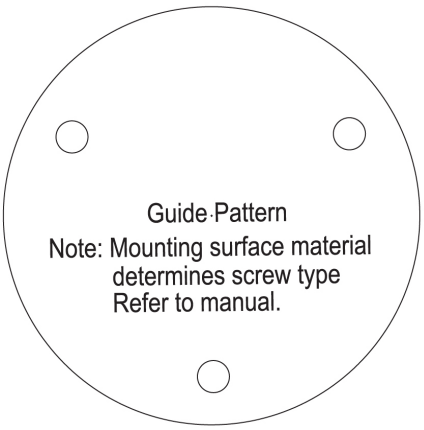
Image System		
Image Sensor	1/3" 2 MP image sensor optimized for low-light performance	
Image Compression Method	Triple Streaming : H.264 / MPEG4 / Motion JPEG	
Max. Frame rate vs. Resolution	H.264	1920X1080(2M)@15fps
	MPEG4	1920X1080(2M)@15fps
	MJPEG	1920X1080(2M)@15fps;
Lens	Built-in fixed lens f=3.1 mm, F=2.0(Mega pixels lens)	
View angle	H: 77° ±5% V: 57° ±5%	
Electric		
Shutter Time	Range from 1/10000s to 1/3.75s selectable (60Hz);Range from 1/10000s to 1/3.125s selectable (50Hz)	
Day/Night mode	Mechanical (ICR) Day/Night	
Min. Illumination	IR LED OFF: 1.5lux (F2.0, 50 IRE, 1/15s);IR LED ON: 0lux	
IR LED	IR LED 24pcs(850nm)	
IR Distance	25 meters (82 ft.)	
IR turn on Status	Under 10 lux by auto control	
LED Life	More than 10,000 hours (50ºC)	
Video Port	BNC X1, 1.0Vp-p, 75Ω	
Video Output	NTSC, 720 X 480 @30fps PAL, 720 X 576 @25fps	
Image Enhance	Exposure Mode: Auto/Manual; White Balance: Auto/Manual Backlight Compensation: 5x5 zones selectable Sharpness, Saturation, Brightness, Contrast: 255 level sensitivity	
Feature Brief		
Alarm detection	Motion Detection: 5 x 5 Motion detection zones & 5 level sensitivity or customized threshold	
Alarm Event	File upload via FTP, SMTP Notification via email	
Image orientation	Mirror, Flip	
Other	Snapshot	
Power supply		
Power Requirement	PoE(Class 3, IEEE802.3af) DC 12V ± 10% AC 24V ± 10%	DC 24V ± 10% AC 24V ± 10%
Power Consumption (max.)	<8W(IR LED on)	<20W(Heater on, IR LED on) <8W(Heater off, IR LED on)
Environment		
Operating Temperature	-10ºC ~ 50ºC (14ºF ~ 122 ºF)	-40ºC ~ 50ºC (-40ºF ~ 122 ºF)
Min. Power-on Temperature	0ºC	-40ºC
Operating Humidity	10~ 90% RH	10~ 90% RH
Storage Temperature	-20ºC ~ 60ºC (-4ºF ~ 140 ºF)	-20ºC ~ 60ºC (-4ºF ~ 140 ºF)
Regularity	CE, FCC, RoHS	
Network		
Ethernet	10Base-T/100Base-TX Ethernet connection for LAN / WAN, RJ45	
Internet protocol	IPv4, TCP/IP, UDP, HTTP, SMTP, DNS, DHCP, NTP, FTP, RTP, RTSP, ICMP, uPNP	
Browser	IE browser 6.0 or above	
I/O connector		
Reset	Within 5 sec for rebooting system; more than 5 sec for loading default	
Mechanism		
Dimensions(ΦxLxH)	Φ70 x L162 x H81.5 mm(2.76" x 6.38" x 3.21")	
Weight	550g(1.1lb)	
Protection Class	IP67	
Option	Without heater	With heater
Accessory		
Mount Type	Wall mount/Ceiling mount with free pack-in bracket (ø63 x 115 mm)	

2. Camera Installation

2.1 Mounting the Camera

2.1.1 Drill the Mounting Location

1. Place the “Guide Pattern Sticker” on the desired mounting location.
2. Drill 3 mounting holes.

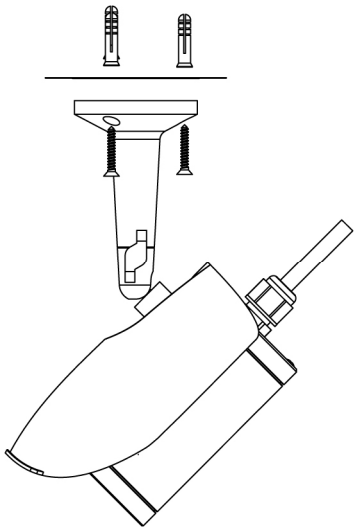


2.1.2 Mounting the Camera

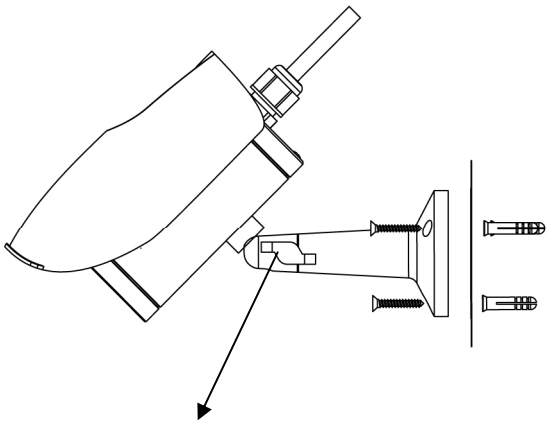
1. Mark hole positions. Then position the bracket to the mounting holes.
2. Position the bracket to the mounting holes.
3. Fix the camera on the bracket.

Note: For cement surfaces, insert the “Plastic Anchors” into the holes. For softer surfaces, do not use the “Plastic anchors”.

Ceiling Mount

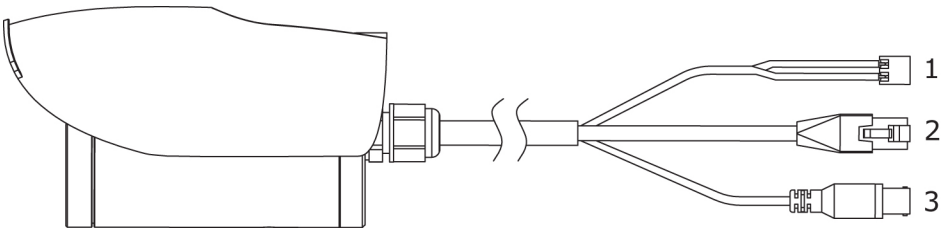


Wall Mount



Loosen the knob to rotate the bracket. Tighten to fix.

2.2 Connecting the Camera



1. **Power In:** Connects to the external power source of DC12V/AC24V. If you want the camera to receive power from Ethernet cable via PoE-enabled device, then it's not needed.

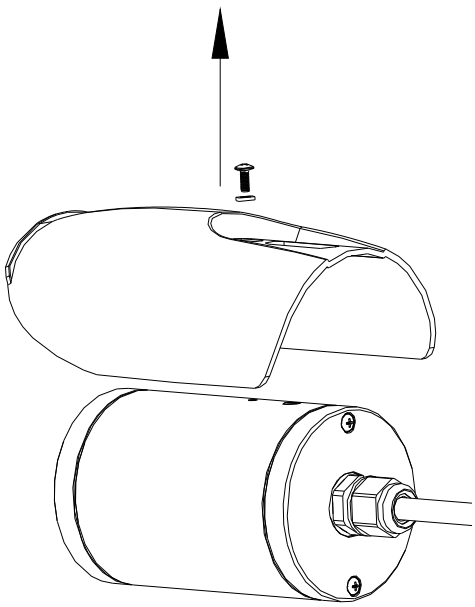
   Note: Camera with heater requires DC24V/ AC24V power supply. The heater model doesn't support PoE function.

2. **RJ-45 Ethernet Connector**: Connects to the LAN port of your computer or network device, e.g., hub, switch or router. To use PoE function, connect to a PoE-enabled network device.
3. **BNC:** Connects to composite video in connector of a monitor. Note that when connecting the camera to an analog monitor, the **Power In** connector must be connected to external power source.)

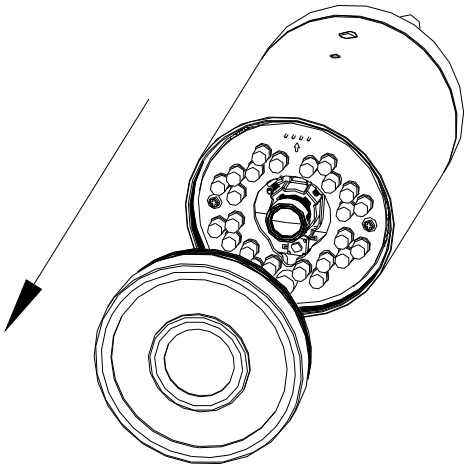
2.3 Hardware Reset

If the Internet Explorer browser cannot be accessed for whatever reason or Software Reset does not work then use Hardware Reset.

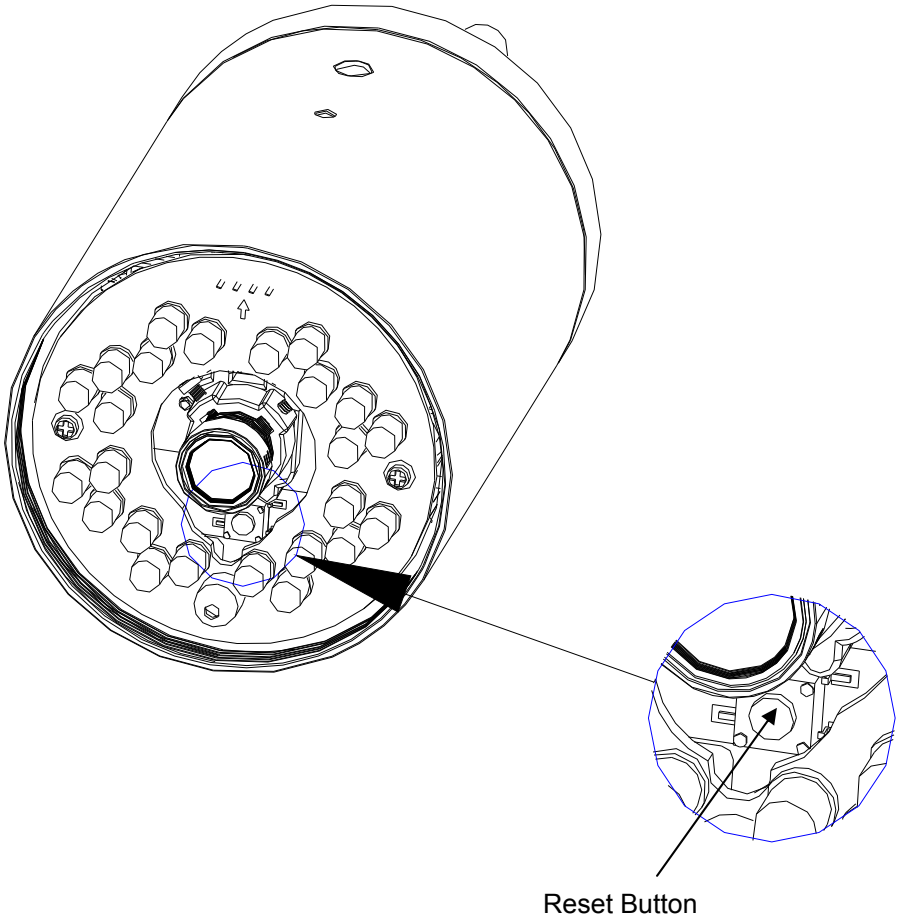
1. Loosen the screw on top of the sunshield and remove the sunshield.



2. Rotate camera cover counterclockwise to take off the cap.



3. Use a screwdriver to press the hardware reset button. Then assemble the front cap & the sun shield back



3. Network Connection and Configuration

3.1 Network Connection Types

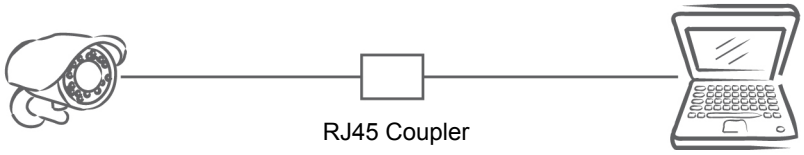
There are many different ways that you can connect the camera to your network, depending on your applications requirements. You should always set the camera's network settings according to your network configurations. The following diagrams depict some typical applications with guidelines on network settings. For more information on network settings, consult your network administrator or ISP as required.

There are many different ways that you can connect the camera to your network, depending on your applications requirements. You should always set the camera's network settings according to your network configurations. The following diagrams depict some typical applications with guidelines on network settings. For more information on network settings, always consult with your network administrator or ISP as required.

Type 1— Direct Connection to a PC

Directly connect the camera to a PC using a standard Ethernet cable.

To extend the connection length, you should use a RJ45 female/female coupler to connect two Ethernet cables together.



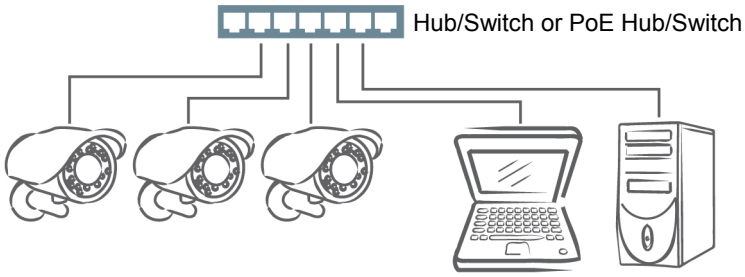
To access the camera, the PC must be on the same network with the camera. The default IP address of the camera is a static one (192.168.1.30). Configure your PC's IP address as 192.168.1. X (where X is a number between 2 to 254, excluding 30) and subnet mask as 255.255.255.0, and then your PC should be able to access the camera.

Type 2: Connecting Camera(s) to a Local Area Network (LAN)

To add the camera(s) to an existing LAN, just connect the camera(s) to the hub or switch on your network. If you want to provide the camera power via the Ethernet connection, a PoE-enabled hub/switch is required.

Assign an IP address to your camera following your network IP allocation policy. You can manually specify the IP address or allocate the IP address automatically using a DHCP server, if available on your network.

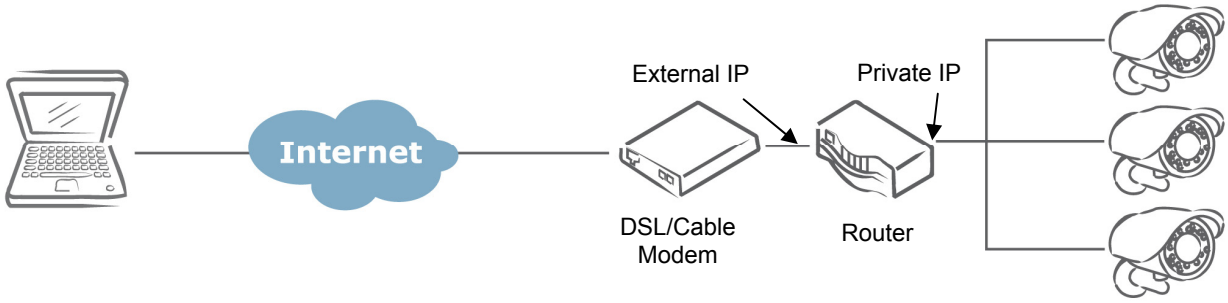
Then, you can monitor and manage the camera via a web browser from a local PC.



Type 3: Remote Connection via the Internet

If the network where the camera resides is connected to the Internet, you can also provide remote access to your camera over the Internet.

Typically a broadband router has built-in DHCP function to assign a local IP address to your camera. You can alternatively assign a fixed IP address to the camera to prevent it from frequent changing.



To access the camera from a local PC, simply use the local IP address of the camera.

To enable remote access, you must configure your router/firewall to forward incoming request to that fixed local IP address of the camera. With the forwarding setting, when an external host sends a request to access your camera, the request will first reach the router's external IP address and then be forwarded to the local IP address of the camera.

Port forwarding is based on the service you want to provide. For example, forward HTTP port to enable remote web access to your camera, or RTSP port to enable access to video/audio streams from the camera.

If your camera is configured to use non-standard HTTP port, then you have to forward that port accordingly.

3.2 Access the Camera for the First Time

The camera comes with a web-based setup utility, allowing you to view the video of the camera and configure the camera for optimal use in your environment.

To access the camera's web-based control utility, you need a PC that meets the following requirements:

- **Operating System:** Windows Vista® or XP
- **Browser:** Internet Explorer Version 6.0 or later
- **CPU:** Intel Pentium 4.2 GHz or higher
- **RAM:** 512 MB or more

Then take the following steps to connect your PC to the camera.

Step 1: Make the connection

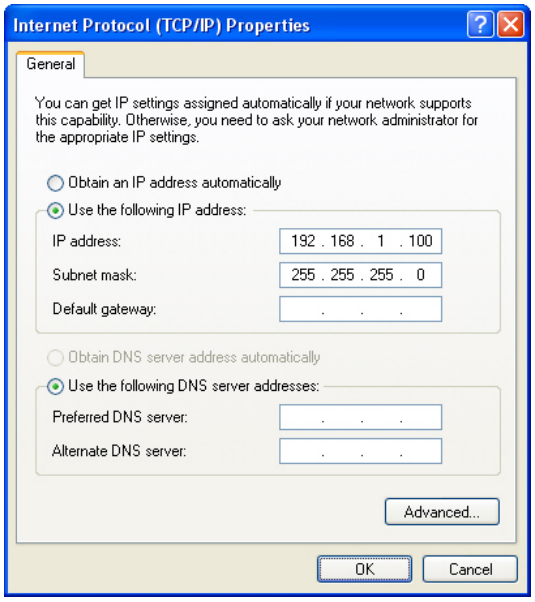
For initial setup purpose, connect one end of an Ethernet cable to the RJ45 connector of the camera and the other end to the LAN port on your PC.

Step 2: Configure your PC's IP address

The camera uses a default IP address of 192.168.1.30 and subnet mask of 255.255.255.0. To have your PC on the same network with the camera, configure your PC's IP settings as below:

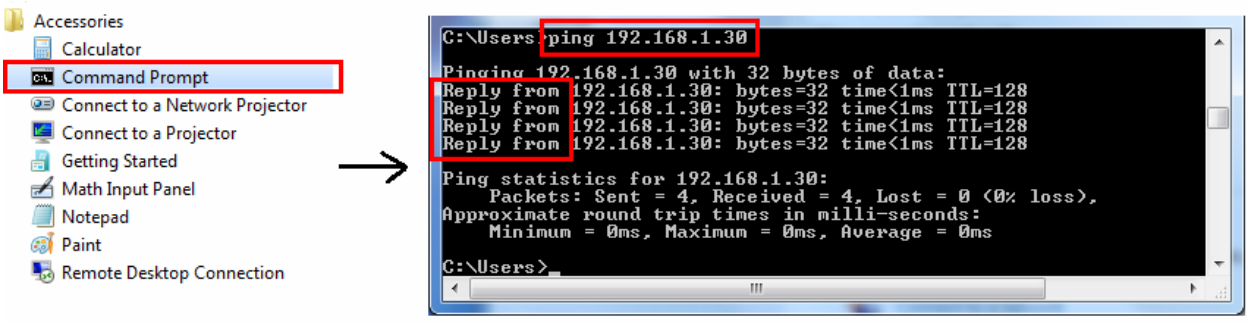
- **IP address:** 192.168.1. X, where X is a number between 2 to 254, excluding 30.
- **Subnet mask:** 255.255.255.0.

Leave other settings ignored and click **OK**.


Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
192 . 168 . 1 . 100
Subnet mask:
255 . 255 . 255 . 0
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

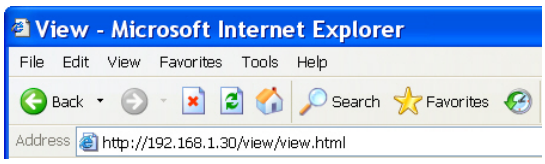
Step 3: Verify the connection between the PC and the IP Cam

1. Launch Command Prompt by clicking the **Start** menu, **Programs**, **Accessories** and then **Command Prompt**.
2. At the prompt window, type **`ping x.x.x.x`**, where x.x.x.x is the IP address of the camera (the default is 192.168.1.30).
3. If the message of **"Reply from…"** appears, it means the connection is established.

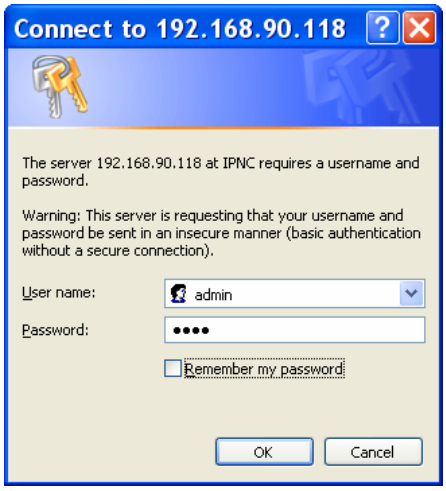


Step 4: Access the camera from IE browser

Start IE browser and enter the IP address of the camera in the URL field. The default is 192.168.1.30.



When prompted to login, enter the user name and the password. (The defaults: **admin**, **1234**). Note that the password is case-sensitive.


Connect to 192.168.90.118
The server 192.168.90.118 at IPNC requires a username and password.
Warning: This server is requesting that your username and password be sent in an insecure manner (basic authentication without a secure connection).
User name:
admin
Password:
Remember my password
OK
Cancel

Upon successful login, you will see the live view screen shown as below:

3.3 Using “IP Finder” to Manage Cameras

IP Finder is a management tool included on the product CD. It is designed to manage your network cameras on the LAN. It can help find multiple network cameras, set IP addresses, show connection status and manage firmware upgrades.

3.3.1 Installing IP Finder

Before proceeding, make sure your operating system is Windows Vista or Windows XP.

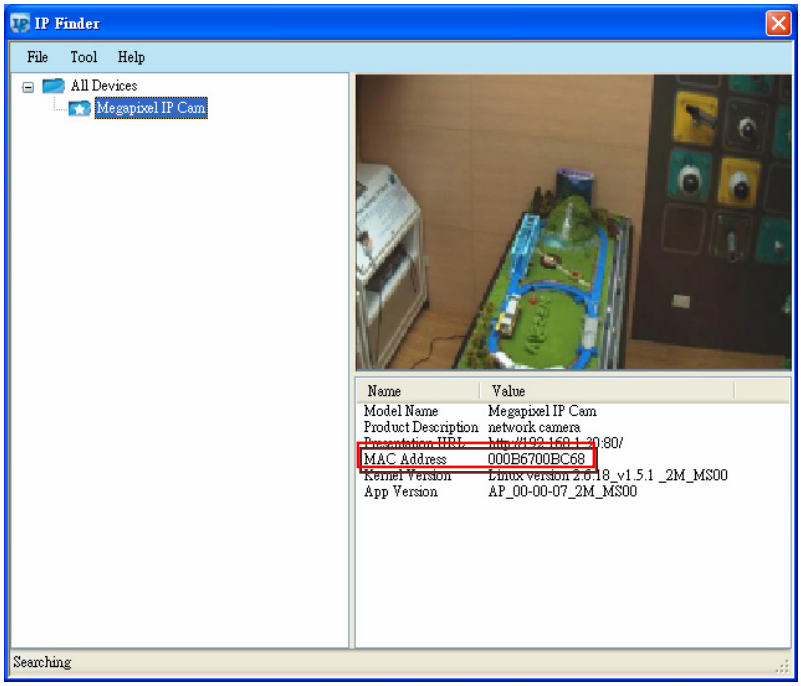
To install the software, simple locate and double-click the **IP Finder** setup file on the provided CD. Then follow the on-screen prompts to proceed.

3.3.2 Using IP Finder

To launch IP Finder, double-click the **IP Finder** shortcut on the desktop or click **Start** > **Programs** > **IP Finder** > **IP Finder**.

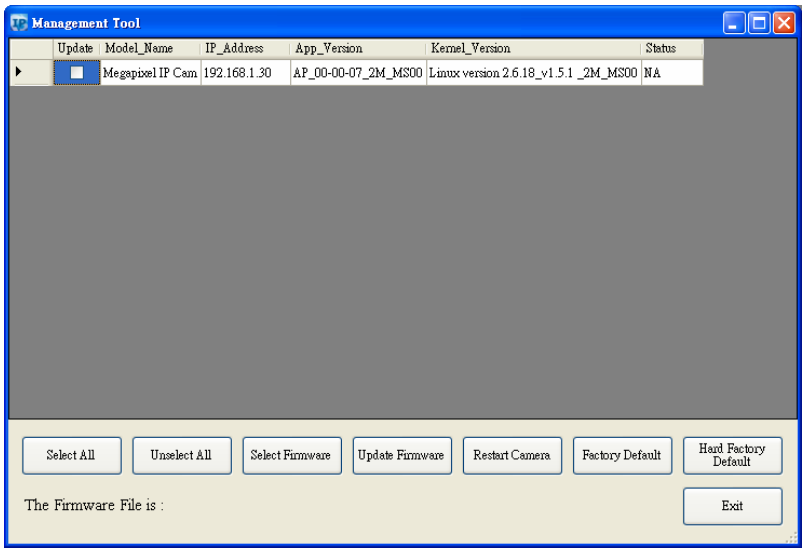
After you launch **IP Finder**, it will search for all the available cameras on the same network. Click the plus sign next to “**All Devices**” to expand the menu and display all the found cameras.

Clicking a target camera will show the live view (if available) and the detailed information of the camera, including the MAC address. Each camera comes with a unique MAC address, which is indicated on the product label. It helps identify which camera is currently accessed, particularly when multiple cameras are connected on your network.



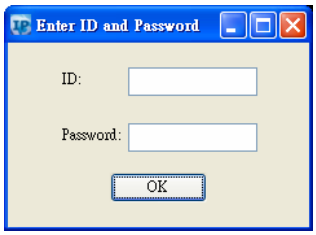
The **Tool** menu of the **IP Finder** allows you to perform these tasks:

- **Search Network:** This option allows you to search the cameras on the network.
- **Set Master ID and Password:** Allows you to set a master ID and password for managing the cameras with IP Finder.
- **Management Tool**: Allows you to restart the camera, update firmware, reset all of the camera settings to default (except network settings) and reset all of the camera parameters to default.

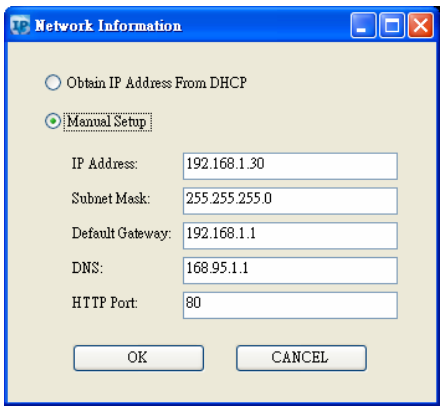


For an individual camera, right-click the camera and a menu will provide these options:

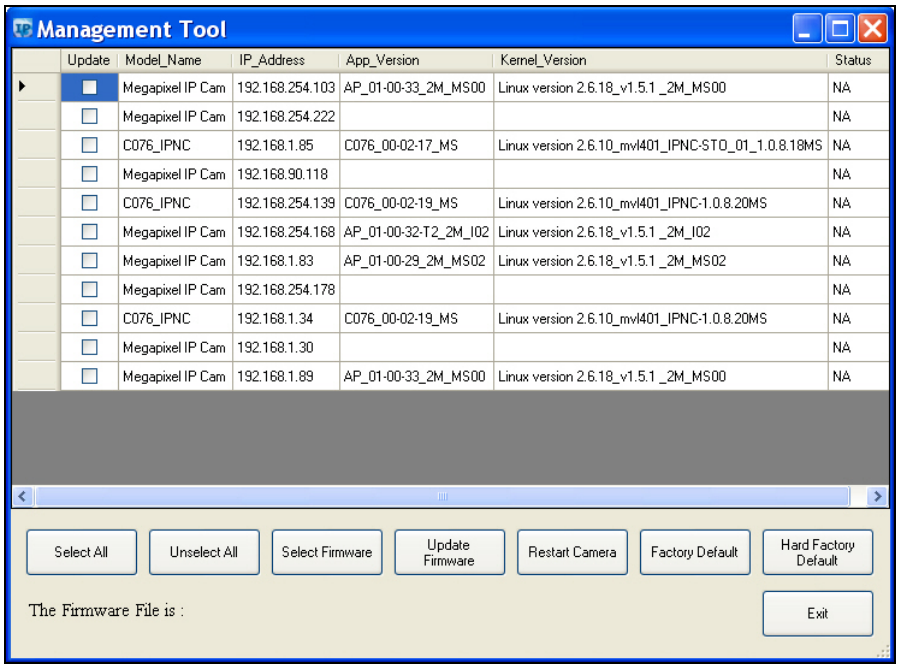
- **Go to Presentation URL:** Launch IE browser to access the web-based utility of the camera.
- **Set Device ID and Password:** Set the login ID and password for managing the camera with IP Finder.



- **Network Information:** Allows you to configure the camera's network settings.



- **(This part is repeated)Management Tool:** Allows to you restart the camera, update firmware, reset all of the camera settings to default (except network settings) and reset all of the camera parameter to default.


Management Tool
Update
Model_Name
IP_Address
App_Version
Kernel_Version
Status
Megapixel IP Cam 192.168.254.103 AP_01-00-33_2M_MS00 Linux version 2.6.18_v1.5.1 _2M_MS00 NA
Megapixel IP Cam 192.168.254.222 NA
C076_IPNC 192.168.1.85 C076_00-02-17_MS Linux version 2.6.10_mvl401_IPNC-STD_01_1.0.8.18MS NA
Megapixel IP Cam 192.168.90.118 NA
C076_IPNC 192.168.254.139 C076_00-02-19_MS Linux version 2.6.10_mvl401_IPNC-1.0.8.20MS NA
Megapixel IP Cam 192.168.254.168 AP_01-00-32-T2_2M_I02 Linux version 2.6.18_v1.5.1 _2M_I02 NA
Megapixel IP Cam 192.168.1.83 AP_01-00-29_2M_MS02 Linux version 2.6.18_v1.5.1 _2M_MS02 NA
Megapixel IP Cam 192.168.254.178 NA
C076_IPNC 192.168.1.34 C076_00-02-19_MS Linux version 2.6.10_mvl401_IPNC-1.0.8.20MS NA
Megapixel IP Cam 192.168.1.30 NA
Megapixel IP Cam 192.168.1.89 AP_01-00-33_2M_MS00 Linux version 2.6.18_v1.5.1 _2M_MS00 NA
Select All
Unselect All
Select Firmware
Update Firmware
Restart Camera
Factory Default
Hard Factory Default
The Firmware File is :
Exit

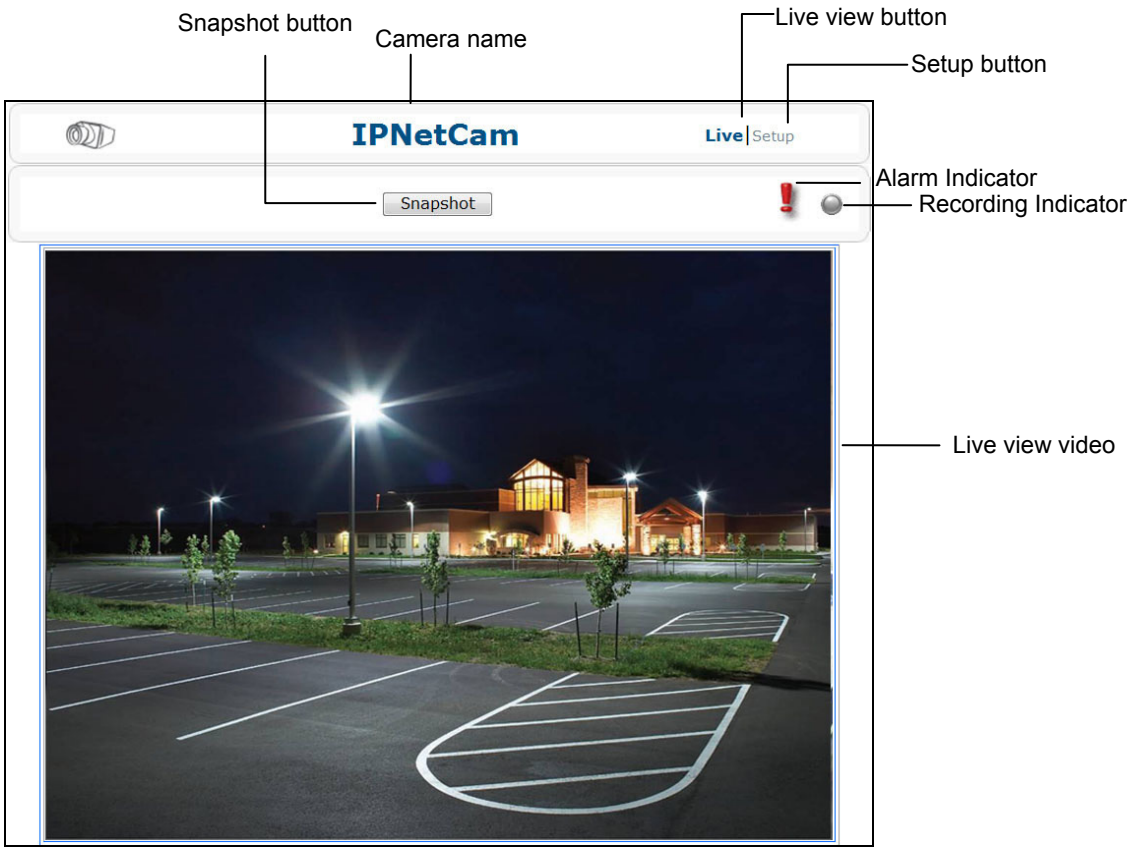
-

4. Using Web-based Control Utility

4.1 Overview

4.1.1 Main Screen

After you login to the camera's web-based control utility, you will first see the live view screen of the camera. The screen is like the picture below:



The live view screen of the utility provides these options:

- **Snapshot:** Pressing this button saves a snapshot of the image currently being displayed.
- **Live view button:** Pressing this button displays the live view of the camera.
- **Setup:** Pressing this button allows you to access the setup page.
- **Camera name:** Displays the name of the camera.
- **Recording Indicator:** Turns red only when the recording is proceeding.
- **Alarm Indicator:** Appears when an alarm is triggered.
- **Live view video:** Shows the live view of the camera.

Note that the accessibility to the options varies according to the login account.

- **Viewer:** Allowed to view only the live view screen. Access to other options are restricted.
- **Administrator:** Can access all the options on the live view page and make configurations on the setup pages.

4.1.2 Setup Menu

The **Setup** options are categorized into four groups: **Image**, **Network**, **System**, **Event** and **Application**. Clicking the name will expand its sub-menu. See the ensuing sections for more information.

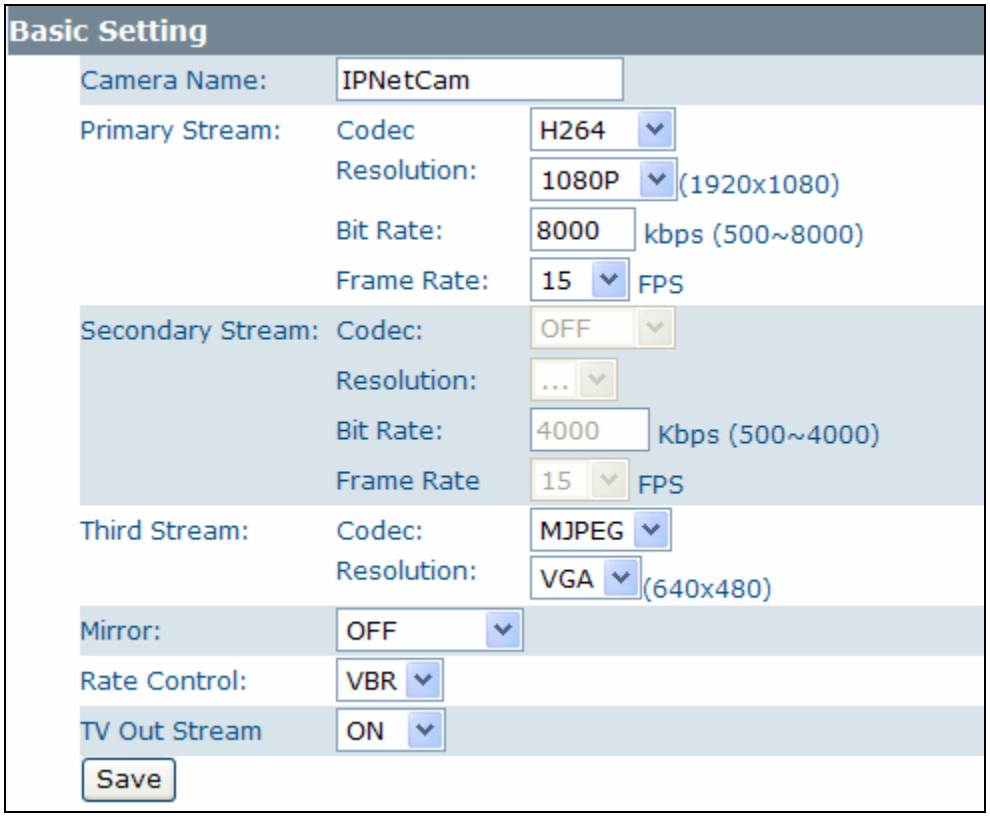
4.1.3 Applying Settings

Each configuration page provides a **Save** button. Settings are applied right after you press the **Save** button. And the browser will refresh to load the latest setting or otherwise pop up the **"Save OK"** message to indicate that settings have been applied.

4.2 Image Settings

4.2.1 Codec

The Codec page allows you to configure the video streams for the camera. You can optionally configure a secondary or third stream to a resolution as required by your third-party device or software.



Camera Name Settings

- Enter a descriptive name of the camera. Note that if you want to make your camera ONVIF compliant (see **Network** > **ONVIF**), no space is allowed for camera name.

H.264 Codec Settings

- **Resolution:** Choose the resolution for video compression. Choices include 1080P, SXVGA, 720P, XGA, SVGA and D1.
- **Bit Rate:** According to your bandwidth, specify a value for data transmission rate (kbps). Higher value gets higher video quality but consumes more bandwidth.
- **Frame Rate:** Choose the intended frame rate, i.e., the video frame to transmit per second. The higher the frame rate, the higher the quality of recording.

MPEG4 Codec Setting

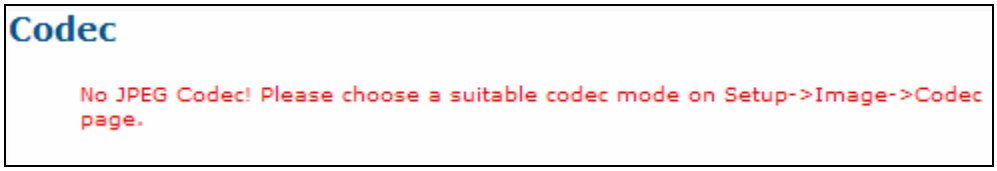
- **Resolution:** Choose resolution size. Choices include 1080P, SXVGA, 720P, XGA, SVGA and D1
- **Bit Rate:** According to your bandwidth, specify a value for data transmission rate (kbps). Higher value gets higher video quality but consumes more bandwidth.
- **Frame Rate:** Choose the intended frame rate, i.e., the video frame to transmit per second. The higher the frame rate, the higher the quality of recording.

MJPEG Codec Settings

- **Resolution:** Choose the resolution for video. Choices include 1080P, SXVGA, 720P, XGA, SVGA and D1.
- **Quality:** Set the image's quality as High, Normal or Low.
- **Frame Rate:** Choose the intended frame rate, i.e., the video frame to transmit per second. For example, 30 fps means 30 frame transmissions per second.

Notes:

1. Live View uses the MJPEG codec. If no streaming is using MJPEG, it will result in no video for live view.



2. If MJPEG is selected for both the primary stream and the third stream, Live View will always display video using the third stream codec.

Mirror Settings

This option allows you to mirror or flip the video image if required.

- **OFF:** Turn off this function.
- **HORIZONTAL:** Flips the images horizontally.
- **VERTICAL:** Flips the images vertically.
- **BOTH:** Flips the images vertically and horizontally.

Rate Control

Choose a bit rate control to manage your bandwidth usage.

- **Variable Bit Rate (VBR):** VBR keeps the video stream quality as constant as possible by varying bit rate. This mode ensures high quality image for motion scene and is often selected when image quality demands priority. However, this mode requires more bandwidth in order to vary the bit rate.
- **Constant Bit Rate (CBR):** CBR maintains a specific and constant bit rate by varying the steam quality. With CBR, streaming is smooth and network throughput is stable for any scene. This mode is typically used with a limited bandwidth environment.

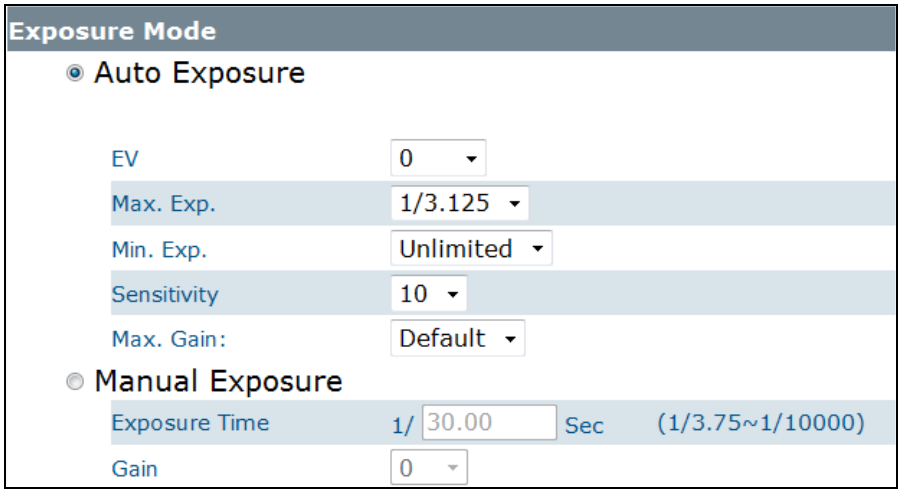
Refer to the table below for selectable codec types for each streaming:

<table>
<tr><th colspan="6">Streaming Combination</th></tr>
<tr><th colspan="2">Primary</th><th colspan="2">Secondary</th><th colspan="2">Third</th></tr>
<tr><td>Codec</td><td>Resolution</td><td>Codec</td><td>Resolution</td><td>Codec</td><td>Resolution</td></tr>
<tr><td rowspan="8">MJPEG</td><td rowspan="2">1080P</td><td>OFF</td><td>N/A</td><td rowspan="2">OFF</td><td rowspan="2">N/A</td></tr>
<tr><td>H264
MPEG4</td><td>D1
VGA
2CIF
CIF</td></tr>
<tr><td rowspan="3">SXVGA
720P
XGA
SVGA
D1</td><td rowspan="2">OFF</td><td rowspan="2">N/A</td><td>OFF</td><td>N/A</td></tr>
<tr><td>MJPEG</td><td>VGA
CIF</td></tr>
<tr><td rowspan="3">H264
MPEG4</td><td rowspan="2">D1
VGA
2CIF
CIF</td><td>OFF</td><td>N/A</td></tr>
<tr><td>MJPEG</td><td>VGA
CIF</td></tr>
<tr><td rowspan="8">H264
MPEG4</td><td rowspan="2">1080P</td><td rowspan="2">OFF</td><td rowspan="2">N/A</td><td>OFF</td><td>N/A</td></tr>
<tr><td>MJPEG</td><td>VGA
CIF</td></tr>
<tr><td rowspan="3">SXVGA
720P
XGA
SVGA
D1</td><td rowspan="2">OFF</td><td rowspan="2">N/A</td><td>OFF</td><td>N/A</td></tr>
<tr><td>MJPEG</td><td>VGA
CIF</td></tr>
<tr><td rowspan="3">H264
MPEG4</td><td rowspan="2">D1
VGA
2CIF
CIF</td><td>OFF</td><td>N/A</td></tr>
<tr><td>MJPEG</td><td>VGA
CIF</td></tr>
</table>

4.2.2 Exposure

The **Exposure** page allows you to configure the **Exposure Mode** and **Backlight Compensation** settings according to the light conditions of the camera.

Exposure Mode



Auto Exposure Settings

- **EV:** Select a desired exposure value. A higher value gets a brighter image.
- **Max/Min. Exp:** Select the maximum / minimum exposure time according to the light source.

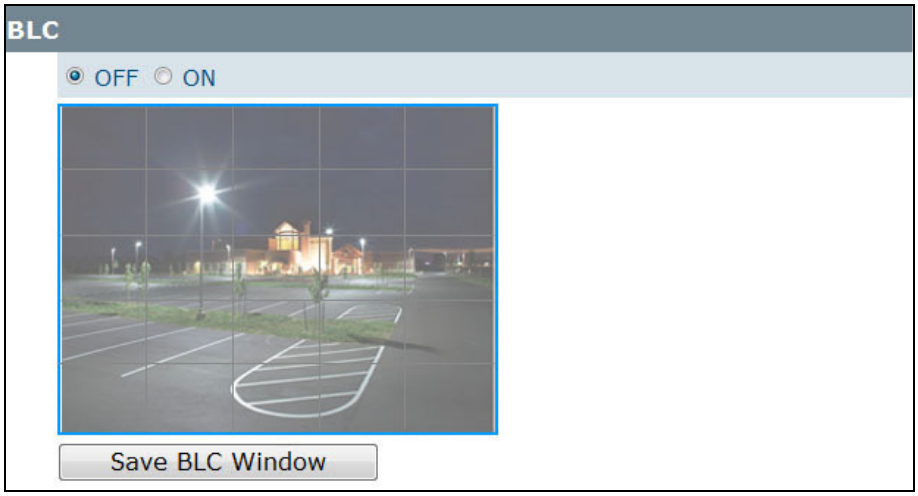
  Note: The value will change based on the frequency setting.
- **Sensitivity:** Select how sensitive the camera reacts to the light. A higher value enables the camera to be more sensitive to the light conditions and adjust exposure in the shortest time interval.
- **Max Gain:** Specify the maximum amount of amplification applied to the image. A high level of gain allows images to be viewable in very low light, but will increase image noise.

Manual Exposure Settings

- **Exposure Time:** Enter a desired exposure time.
- **Gain:** Select a gain value from 0 to 16. A high level of gain allows images to be viewable in very low light, but will increase image noise.

BLC

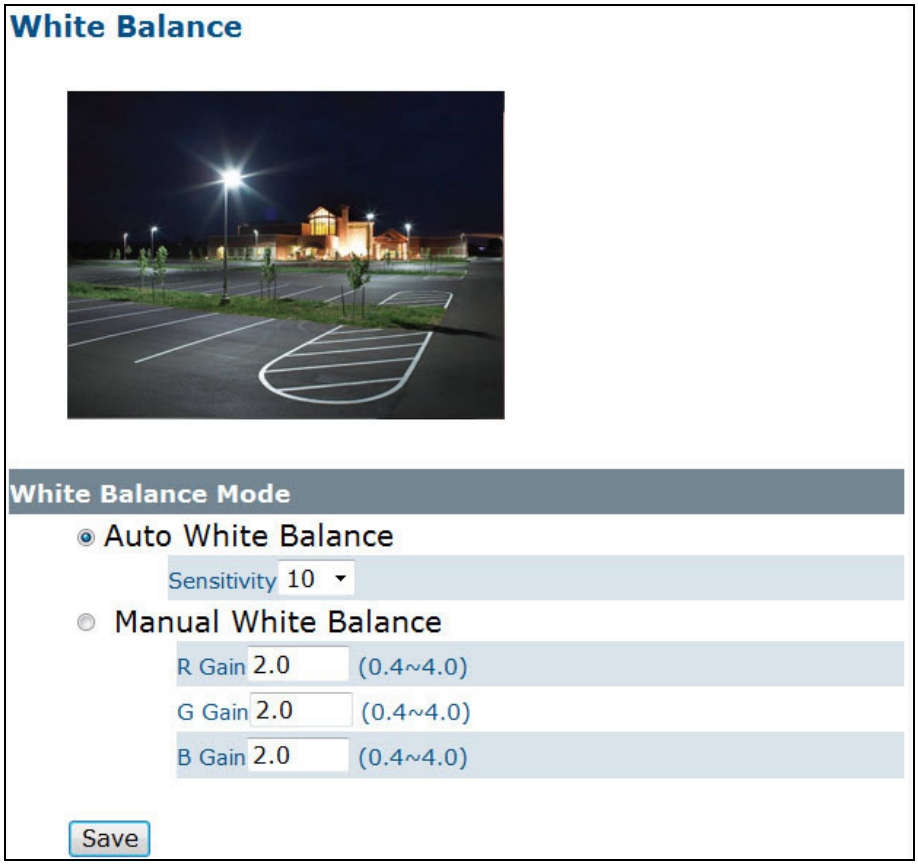
The **Backlight Compensation** function allows you to provide optimal exposure of subjects under back light circumstances.



- **OFF/ON:** Choose to enable or disable the BLC function.
- **BLC area setting:** BLC area is the dark area where more details are expected. Define your BLC area by clicking squares displayed on the screen and then press **Save BLC Window** to save the setting.

4.2.3 White Balance

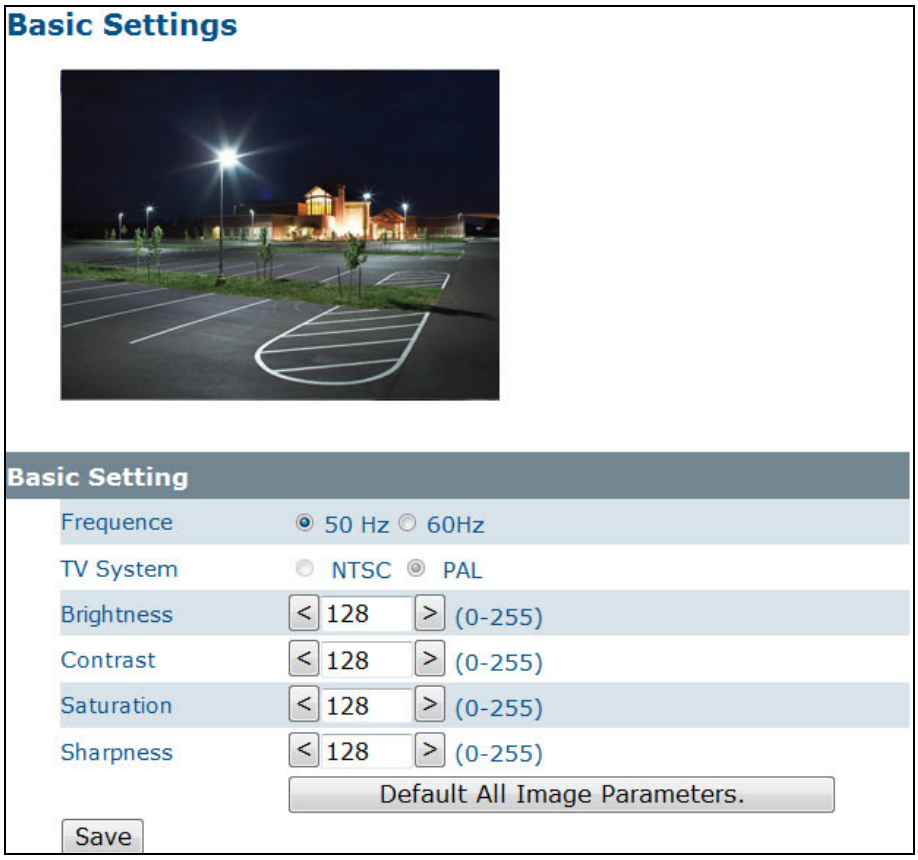
This page allows you to set a white balance mode according to your light condition.



- **Auto White Balance:** Use this option when there is no special lighting in the environment. The camera will adjust the white balance automatically according to the light conditions and the sensibility you specify.
- **Manual White Balance:** With special light in the environment, you can use this option to manually adjust the red, green and blue channels, which are mostly affected by special light. For example, if red color is too bright, then you should lower the R Gain value. For each channel, you can adjust the gain values from 0.4 to 4.0.

4.2.4 Basic Settings

This page allows you to specify a frequency and adjust the basic image settings to optimize your video image.



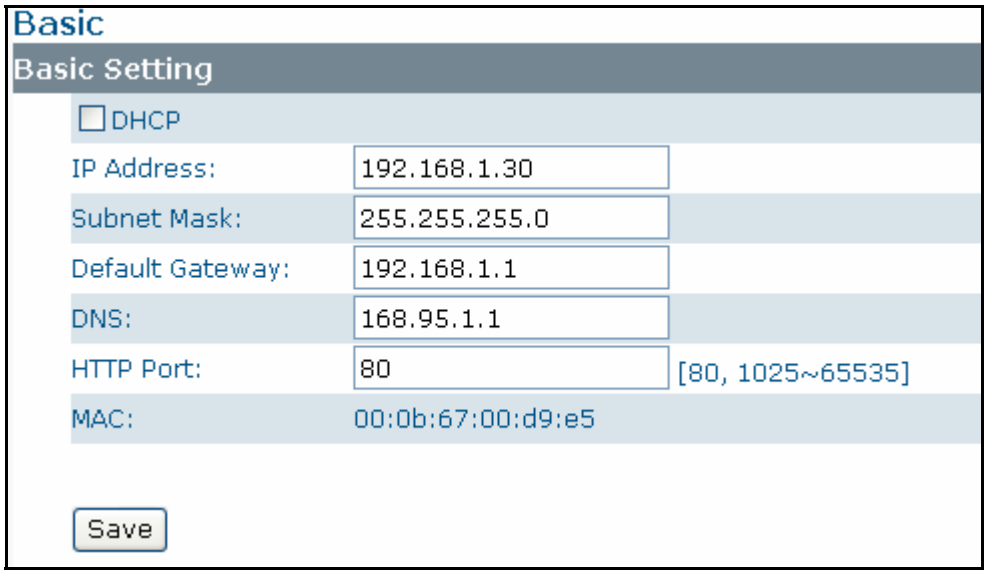
- **Frequence:** Select an appropriate frequency to reduce the flicker on the image.

  Note: This setting may affect other settings such as "**Max. Exp**" and "**Min. Exp**".

- **TV System:** Displays current video standard: NTSC or PAL. This setting is subject to your model type (NTSC/PAL) and is not adjustable.
- **Brightness:** Adjust the image brightness level.
- **Contrast:** Adjust the image contrast level.
- **Saturation:** Adjust the image saturation level.
- **Sharpness:** Adjust the image sharpness level.
- **Default All Image parameters:** Pressing this button will restore all the image settings to the defaults.

4.3 Network

4.3.1 Basic



- **DHCP:** If there is a DHCP server on the network and you enable this option, the server will automatically assign an IP address and related information to the camera.

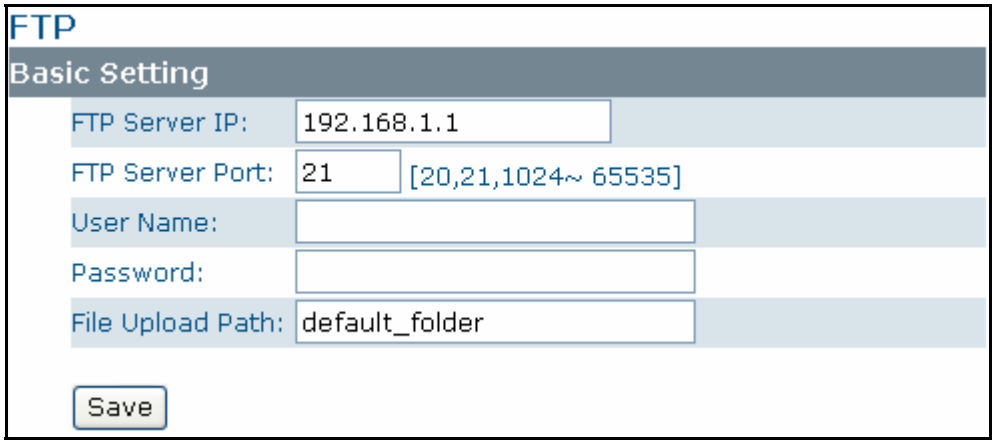
Note: If there is no DHCP server on your network or you prefer to manually assign an IP address to your camera, leave this checkbox blank.

- **IP Address & Subnet Mask:** If DHCP function is not enabled, you have to assign an IP address with the subnet mask to the camera.
- **Default Gateway:** Enter the IP address of the gateway if required. Please contact your network administrator whether you need to set up the gateway.
- DNS: Enter the IP address of a DNS server.
- **HTTP Port:** Use the standard HTTP port number or alternatively specify another port number between 1025 and 65535.

  If you choose to use a non-standard port, and your camera on the LAN is to be accessible from the Internet, then you must configure your router/firewall to forward incoming HTTP request to that specified port (via NAPT/port forwarding settings).
- **MAC:** Display the MAC address of the camera. Each camera comes with a unique MAC address, which is indicated on the product label. It helps you to identify which camera is currently accessed, particularly when multiple cameras are connected on your network.

4.3.2 FTP

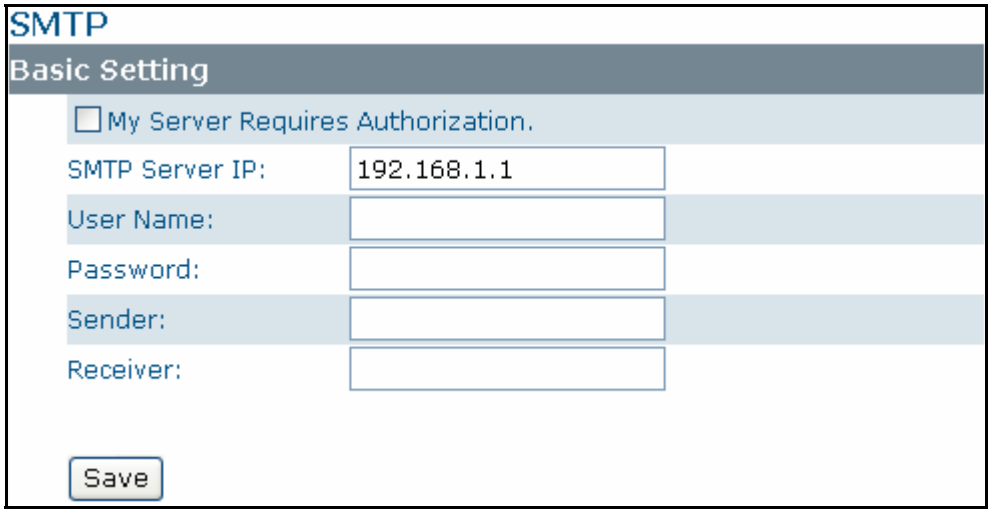
To allow the camera to upload recorded video clip to a FTP server, you have to specify a FTP server and configure related settings.



- **FTP Server:** Enter the IP address of your FTP server.
- **FTP Server Port:** Enter the port number of the FTP server.
- **User Name:** Enter the user name to logon to the FTP server.
- **Password:** Enter the password to logon to the FTP server.
- **File Upload Path:** Specify the folder which has been created under FTP server root directory.

4.3.3 SMTP

To allow the camera to send you email notification on alarm when an event is triggered, you need to specify a SMTP server to send the e-mail.



- **SMTP Server Requires Authorization:** If your SMTP server requires authorization to send e-mail, enable this option.
- **SMTP Server IP Address:** Enter the IP address of your SMTP server.
- **User Name:** Enter the user name to logon to the SMTP server.

- **Password:** Enter the password to logon to the SMTP server.
- **Sender:** Enter the e-mail address to be shown as the sender of the notification e-mail.
- **Receiver:** Enter the e-mail address to which the notification e-mail is sent.

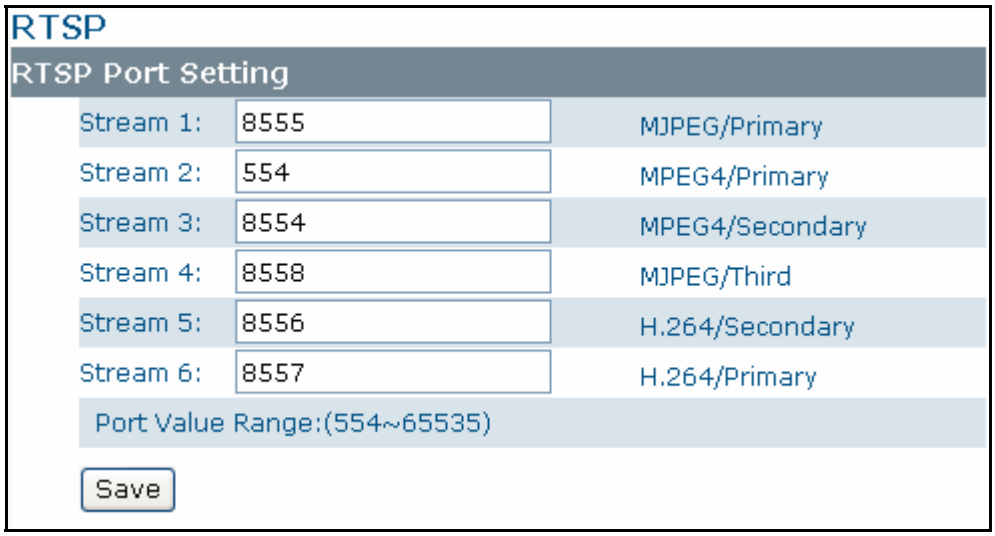
4.3.4 NTP

If you want your camera to synchronize its time clock with a NTP (Network Time Protocol) sever, configure the NTP server settings here.

- **NTP Server IP Address:** Enter the IP address or domain name of the NTP server you want to use.
- **Time Zone:** Select a time zone in which the camera is located.
- **Automatically Adjust for Daylight Saving Time Changes:** Check this check box if you want the camera to adjust the daylight saving time automatically.

4.3.5 RTSP

RTSP is a standard for connecting a client to establish and control streaming data over the web. If you want to allow third-party devices or software to access video/audio streams from the IP camera over the network, you must configure the RTSP ports. You can provide five streams according to the specific codec mode with different RTSP port.

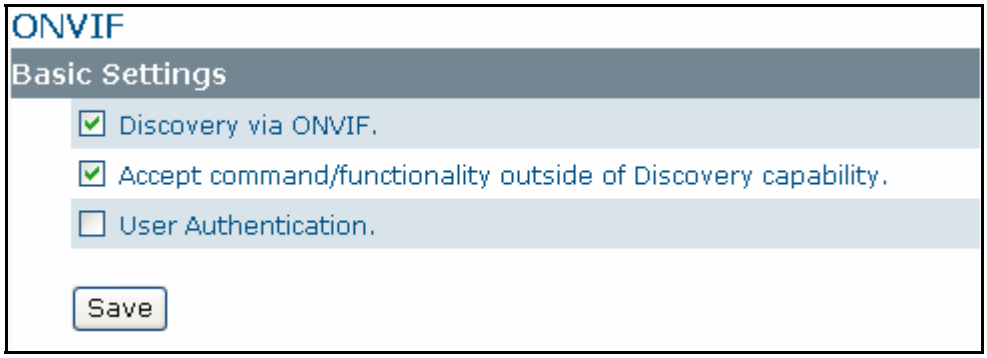


To use a RTSP player to access the camera's stream, you have to use correct RTSP URL to request the streams. Refer to the table below for RTSP URLs:

MJPEG Primary	rtsp://192.168.1.30:8555/mjpeg
MJPEG Third	rtsp://192.168.1.30:8558/mjpeg
H.264 Primary	rtsp://192.168.1.30:8557/h264
H.264 Secondary	rtsp://192.168.1.30:8556/h264
MPEG4 Primary	rtsp://192.168.1.30:554/mpeg4
MPEG4 Secondary	rtsp://192.168.1.30:8554/mpeg4

4.3.6 ONVIF

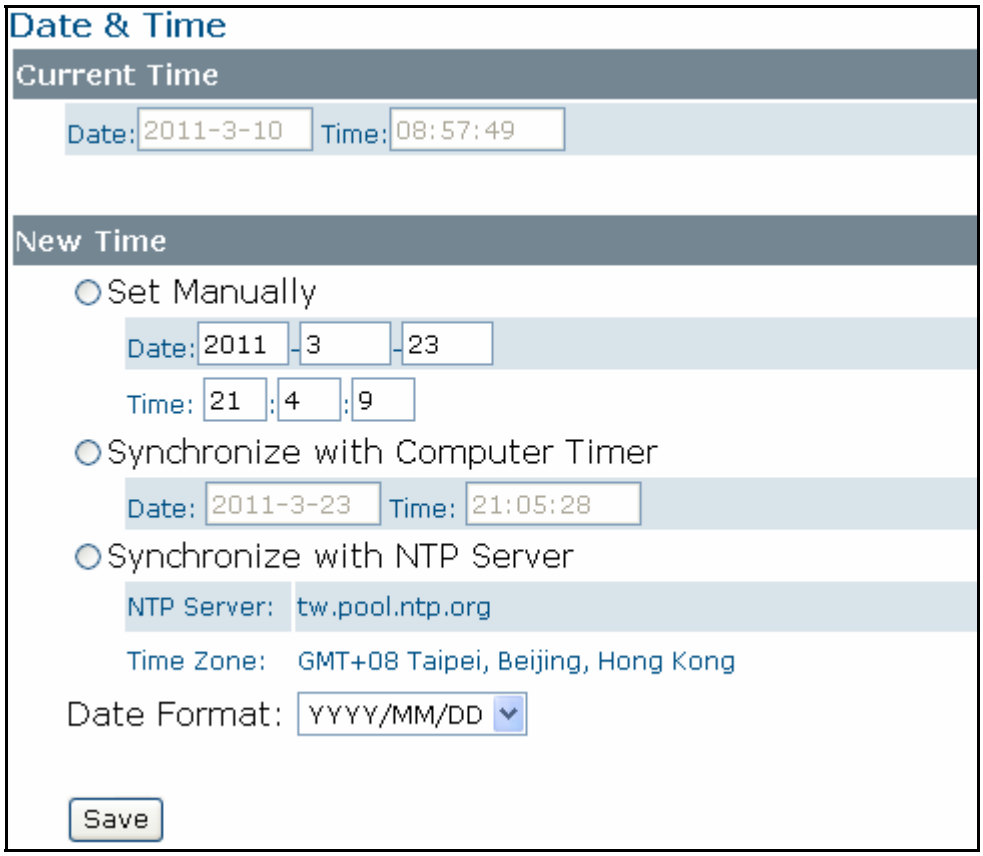
ONVIF is a standard that ensures interoperability between IP-based physical security products regardless of manufacturer. This camera is ONVIF compliant and you can configure whether the camera can be found by other ONVIF compliant products and the related settings.



- **Discovery visa ONVIF:** Check this option if you want the camera to be discovered by other ONVIF compliant devices in a network, e.g., an ONVIF compliant NVR.
- **Accept command/functionality outside of Discovery capability:** If checked, the camera is allowed to accept commands from ONVIF compliant device thus changing the camera's functionality.
- **User Authentication:** If an ONVIF compliant device needs authentication for communication, then you should enable this option.

4.4 System

4.4.1 Date and Time



Current Time

It displays the current date and time of the camera. Date and time will update after you configure new settings in the **New Time** section and click **Save** to apply the settings.

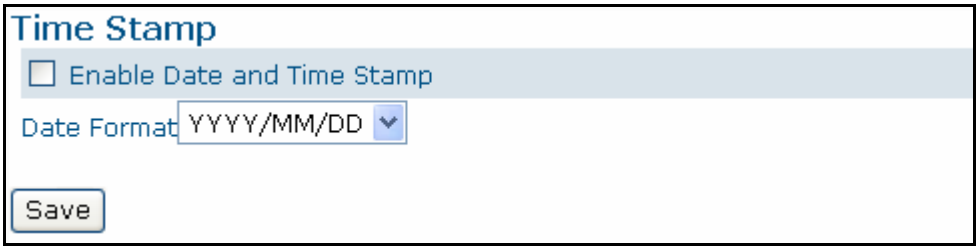
New Time

You can set the camera time by one of the following methods:

- **Set Manually:** Manually enter your camera's date and time settings in the given fields.
- **Synchronize with Computer Timer**: Use this option to synchronize your camera's date and time with the computer timer.
- **Synchronize with NTP Server:** Use this option to synchronize your camera's date and time with an NTP (Network Time Protocol) server.
- **Date format:** Allows you specify a desired date format.

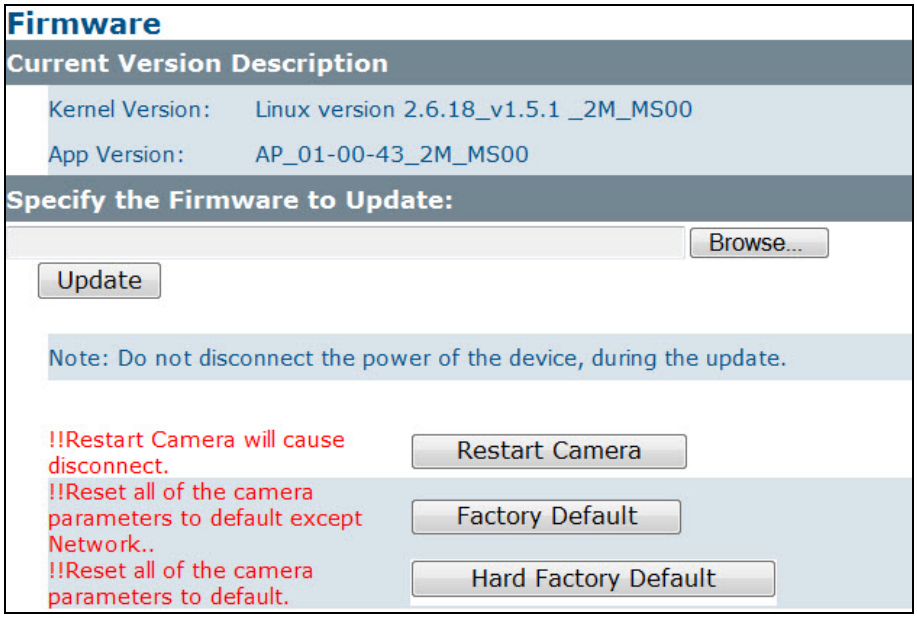
4.4.2 Time Stamp

The **Time Stamp** function allows you to overlay the time stamp on video. If you enable the Time Stamp function, the recorded video will also be added with time stamp.



- **Enable Date and Time Stamp:** Check this box to enable or disable the date and time stamp on images/video clips.
- **Date Format**: Select the desired date format for the time stamp.

4.4.3 Firmware



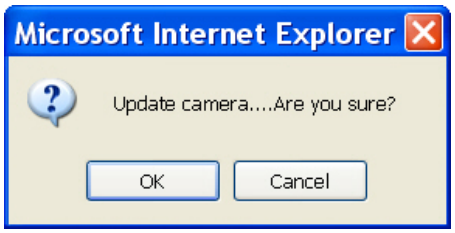
Current Version Description: Displays current version of the firmware.

Specify the firmware to update: This function is designed to update the firmware of the camera. To perform the firmware upgrade, note that:

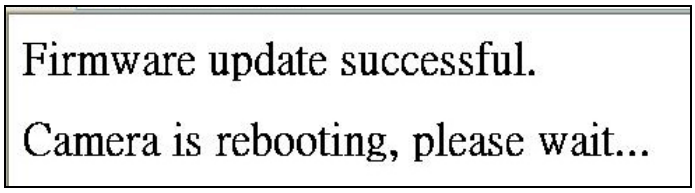
- Stop all camera operations before you proceed.
- Keep the network connected during the update process.
- DO NOT turn off or restart the camera during the firmware update process.

To upgrade the firmware:

1. Click the **Browse** button to locate the firmware file.
2. Click the "**Load Firmware to Camera**" button to start upgrade.
3. When prompted, click **OK** to proceed.



4. Wait about 20~60 seconds until the file is successfully updated. Once update is completed, the browser will show a message reads "Firmware update success". Then it will take 60 seconds to restart the camera.



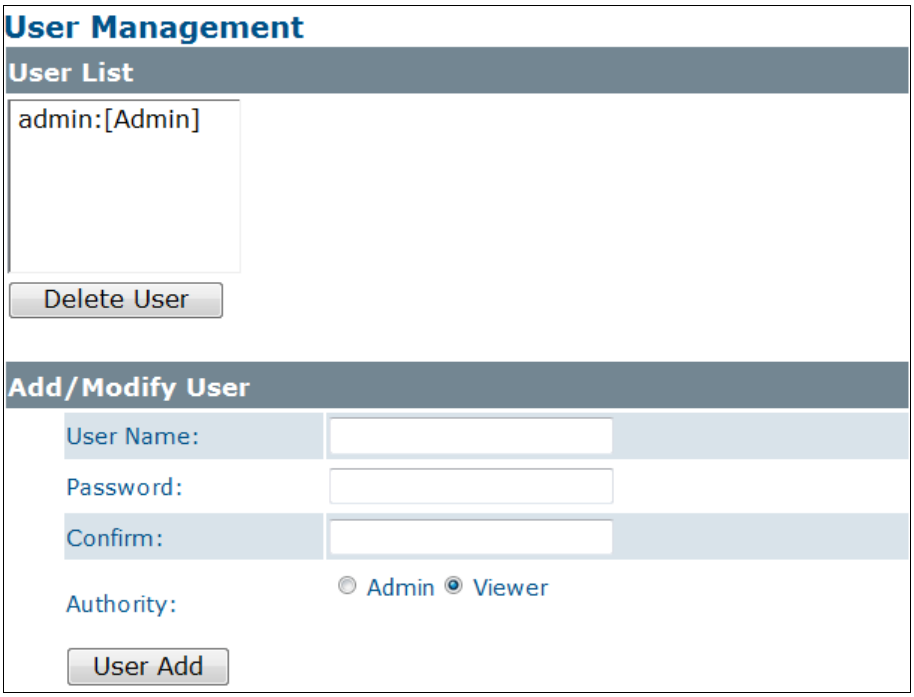
5. The utility will automatically go back to live view screen after firmware has been updated successfully.

You can also perfume these tasks on the **Firmware** page:

- **Restart camera:** Restart your camera. This will cause all streams to disconnect.
- **Factory Default:** Reset all of the camera settings to the defaults, except network settings.
- **Hardware Factory Default:** Reset all of the camera parameters to the defaults, including the network settings.

4.4.4 User Management

The **User Management** page allows you to manage user accounts and access privileges.



User List

It displays the list of current user accounts of the camera. To delete a user account, select it from the list and then click the **Delete User** button.

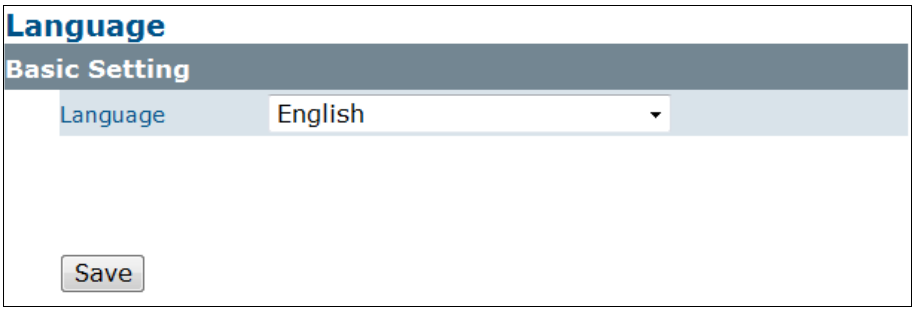
Add/Modify User

You can add a new user or modify current user's account or authority.

- To add a new user, enter the user name and password and specify the authority. Then click **Apply** to add a user.
- To modify password of existing user, enter the user name and modify the password.
- Two roles can be specified:
  - **Admin (Administrator):** Can access all camera functions, pages and make configurations.
  - **Viewer (Guest):** Can only access the live view page and take snapshot.

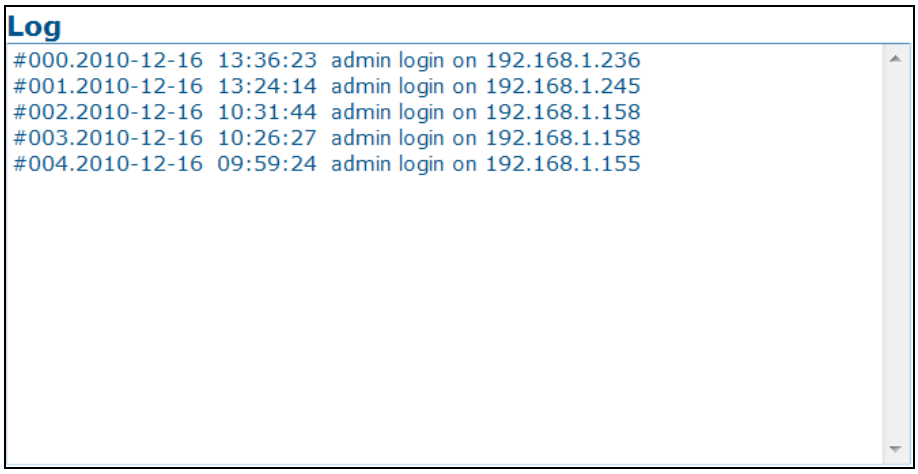
4.4.5 Language

The **Language** drop-menu allows you to change the language of the web interface. Supported languages include English, Spanish, Italian, Simplified Chinese and Traditional Chinese. After you click **Save**, the settings is applied and the browser will refresh to reflect the change.



4.4.6 Information

This page displays information about the camera's operations and activities, including all the login and alarm records.



4.5 Event

When an event occurs, it triggers an alarm and the camera will take a pre-defined action, e.g., sending a recorded video clip or JPEG files to a designated server. With this camera, an event can be triggered by the camera's detection mechanism, such as motion detection.

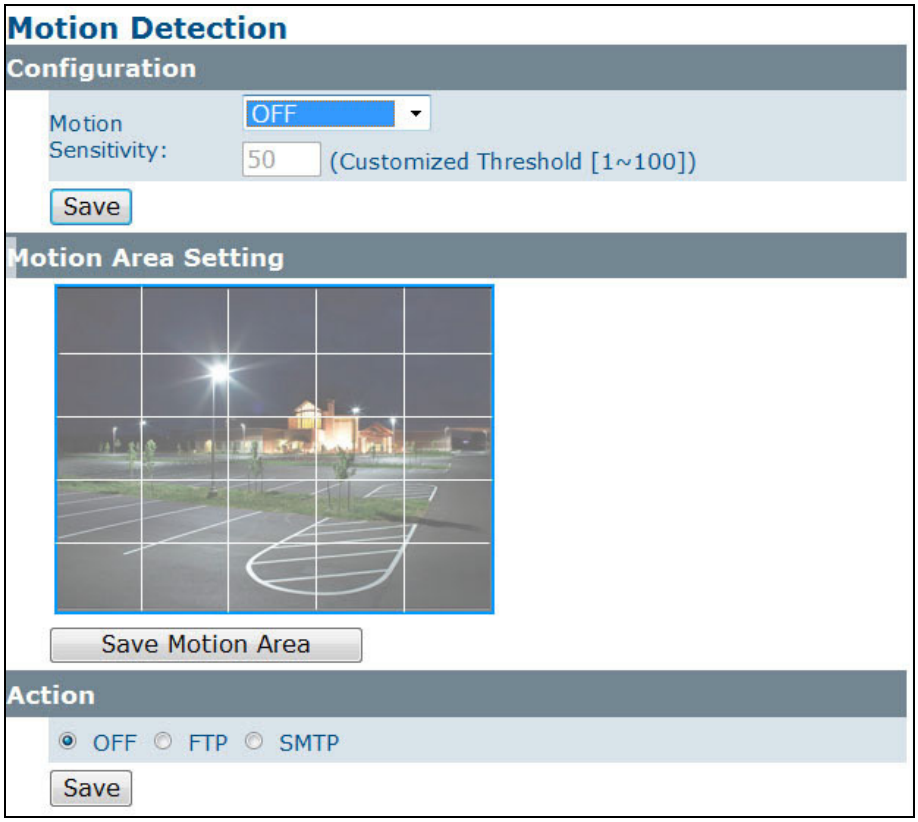
4.5.1 Motion Detection

When motion detection is enabled, the camera detects motion under a pre-specified condition within a designated area. When motion is detected, the camera will generate an alarm and then take a specified action.

Note: To use the motion detection function, the following two conditions must be met:

1. You must select MJPEG codec for one of the streams to enable the live view.

2. You must select H.264 or MPEG4 codec for one of the streams to process the motion detection.



Configuration

- **Motion Sensitivity:** Specify the sensitivity to moving objects before the camera triggers an alarm. The higher the sensitivity, the slighter the movement is required to generate an alarm. You can alternatively select **User Define** and enter a value from 1 to 100 in the **Customized Threshold** field. When the motion within a specified area exceeds the threshold, an event is triggered.

  When set to **OFF**, motion detection is disabled.

Motion Area Setting

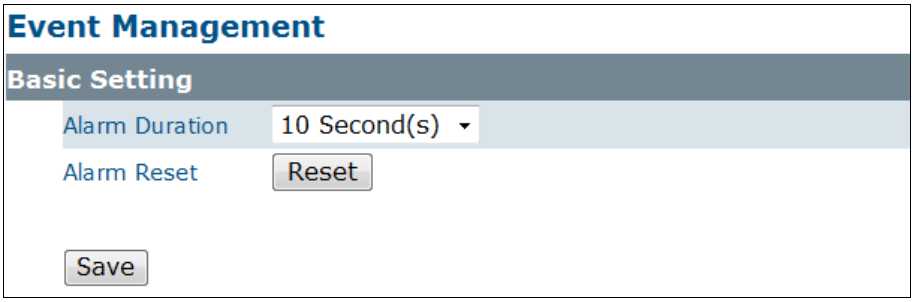
- **Motion area setting:** Click target squares displayed on the screen to define detection areas Once configured, click **"Save Motion Window"** to save settings.

Action

Specify the action to be taken when an alarm is triggered upon motion detection:

- **OFF:** No action will be taken.
- **FTP:** Recorded JPEG will upload to a FTP server when alarm is triggered.
- **SMTP:** Notification e-mail with the recorded JPEG attached will be sent to a SMTP server.

4.5.2 Event Management



- **Alarm Duration:** Specify the duration of the alarm when an event is triggered.
- **Alarm Reset:** Use this button to stop the current alarm and restart event detection again.

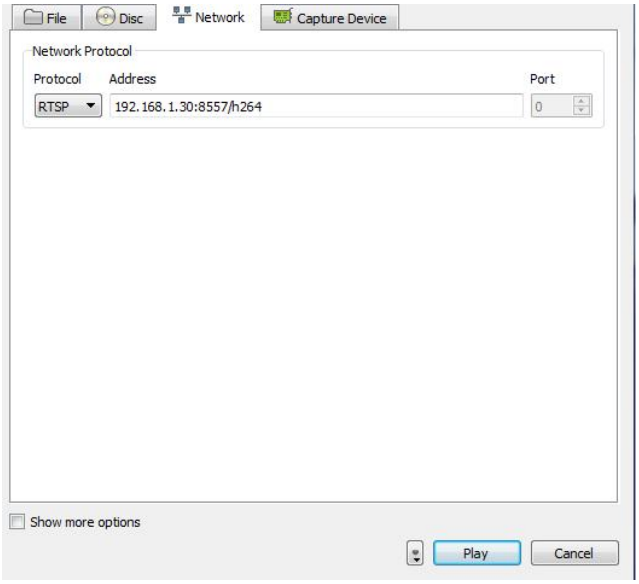
5. Using VLC Player to View RTSP Streaming

Note 1: This information is provided for convenience only. We will not provide support for the installation or use of VLC software.

Note 2: The IP address used in the document are the default URLs and are provided for example purposes only. You will need to use an IP address that is appropriate for your network.

To use VLC player to view RTSP streaming, follow these step to proceed:

1. Download and install VLC Player (version 1.0.5) from http://www.videolan.org/vlc/.
2. Launch VLC Player
3. Click Media _Open Network Stream.



4. On the '**Network'** tab, choose **RTSP** under the '**Protocol'** menu.
5. Enter the IP address of the stream that you want to view in the '**Address'** field.

   Default URL is as below:

MJPEG Primary	rtsp://192.168.1.30:8555/mjpeg
MJPEG Third	rtsp://192.168.1.30:8558/mjpeg
H.264 Primary	rtsp://192.168.1.30:8557/h264
H.264 Secondary	rtsp://192.168.1.30:8556/h264
MPEG4 Primary	rtsp://192.168.1.30/mpeg4
MPEG4 Secondary	rtsp://192.168.1.30:8554/mpeg4

6. Click **Play** and you will see the image streaming.